

Notice of Allowability

Application No.

10/687,571

Examiner

Karen E. Toth

Applicant(s)

FREI ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the arguments and amendments filed 14 February 2007.
2. ☒ The allowed claim(s) is/are 1-3, 5-8, 27, 44, 45, 47-50 and 93-101.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

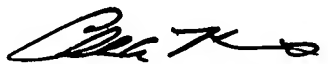
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


CHARLES A. MARMOR II
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700

DETAILED ACTION

Allowable Subject Matter

1. The following is an examiner's statement of reasons for allowance:

The prior art of record fails to anticipate or make obvious the method of claims 1-3, 5-7, 27, and 93-96, including, *inter-alia*, using a computer to determine a detection cluster associated with a neurological event of a patient, where the detection cluster is associated with at least one detection exceeding a predetermined threshold of a measure for a first predetermined time duration, by receiving a set of at least one signal and using the set to determine the onset of a neurological event, determining an end of the event based on the signal set, where determining the end is based on all the neurological signals of the set being less than the predetermined threshold of the measure for a second predetermined time duration, and clustering a set of at least one detection between the onset and end of the neurological event.

The prior art of record fails to anticipate or make obvious the structure of claims 44, 45, 47-49, and 98, including, *inter-alia*, an apparatus comprising a configuration of monitoring elements and a processor coupled to the elements and configured to receive a set of at least one signal, determine the onset of a neurological event based on the signal set by determining a detection that exceeds a predetermined threshold of a measure for a first predetermined time duration, determine the end of the neurological event based on the signal set and all the neurological signals of the set being less than the predetermined threshold for a second predetermined time duration, and cluster a set of detections between the onset and end of the neurological event.

The prior art of record fails to anticipate or make obvious the inventions of claims 8 and 50, including, *inter-alia*, determining a detection cluster associated with a neurological event when a detection exceeds a predetermined threshold for a first predetermined time by receiving a set of at least one signal and using it to determine an onset of the event and the end of the event, clustering a set of detections between the onset and end of the neurological event, and determining a time interval between a first and a second adjacent detection, and clustering the detections if the interval is less than a second predetermined duration.

The prior art of record fails to anticipate or make obvious the structure of claim 97, including, *inter-alia*, an apparatus comprising a configuration of monitoring elements and a processor coupled to the elements and configured to receive a set of at least one signal, determine the onset of a neurological event based on the signal set by determining a detection that exceeds a predetermined threshold of a measure for a first predetermined time duration, determine the end of the neurological event based on the signal set, and cluster a set of detections that includes a first and a second detection between the onset and end of the neurological event.

The prior art of record fails to anticipate or make obvious the method of claims 99-101, including, *inter-alia*, determining a detection cluster associated with a neurological event by receiving a set of at least one signal and using the set to determine an onset and end of an event, and clustering a set of detections that includes at least a first and a second detection between the onset and end of the event, where the first detection exceeds a predetermined threshold for a predetermined time period.

Fischell (US Patent 6353754) discloses a method and system for detecting a neurological event (column 5, lines 19-21) comprising receiving a set of at least one signal (column 5, lines 11-18); determining an onset and an end of a neurological event based on the set (column 5, lines 38-41, 53-55); and clustering a set of at least one detection between the onset and end of the neurological event, where the cluster is associated with at least one detection exceeding a predetermined threshold for a first predetermined time duration (column 3, lines 14-18; column 9, lines 51-62). The examiner notes that Fischell does not expressly use the term "cluster" – however, since applicant regards a detection cluster as a set of neurological signals that exceed an intensity ratio threshold for a predetermined period of time (paragraph [07] of applicant's specification), the seizure detection disclosed by Fischell may be considered to meet these requirements. Fischell does not disclose determining the end of a neurological event when the signal drops below the threshold for a predetermined time, clustering at least two detections in a cluster, or clustering adjacent detections into one if a predetermined time period between the detections is not met.

Pless (US Patent 6810285) discloses a method and system for detecting a neurological event where an event onset is determined when a threshold is exceeded, and the end of the event is marked when the signal passes below the threshold; Pless does not disclose determining the end being based on the signal remaining below the threshold for a predetermined period of time.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 6360122 to Fischell, which discloses similar systems and methods.

US Patent 7149572 to Frei, which discloses similar systems and methods.

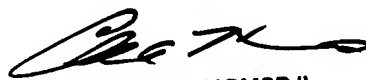
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen E. Toth whose telephone number is 571-272-6824. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor, II can be reached on 571-272-4730. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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